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work in which he had selected out the elementary species produced by a self-fertilized corn plant. With reference to number of rows of grain on the cob some of the forms he happened to get showed a strong tendency to produce ears with ten rows and others with fourteen rows. None had twelve for their mode, and he had been led to the belief that amongst the elementary species of corn none of them, when purely homozygote, tends to produce twelve rows. Dr. E. M. East, of New Haven, who had done some similar work, had happened to get a cross-section of the species which tended strongly to produce twelve rows and not ten or fourteen, which is just what one would expect if the present view of elementary species is correct.

Under this view, a so-called elementary species is simply a completely homozygous form, which necessarily reproduces itself with almost absolute fidelity. The number of such forms possible in a species depends on the number of independent Mendelian characters present, and the degree of variability of these characters. The various forms under which one of these characters exhibits itself may represent a continuous series such as we have assumed above, or the series may be broken at various points, leaving gaps which are bridged only in the ancestral lines of the allelomorphs having a common descent, just as we find the case to be with large and variable groups of organisms.

It is seen, therefore, that if Darwin's idea of the manner in which evolution occurs is true, then *the results secured by the breeder of so-called elementary species are a necessary result of Mendelian behavior of Darwinian characters*. The remarkable fidelity with which so-called elementary species reproduce themselves is thus seen to be in entire accord with the theory of gradual variation taught by Darwin.

The work of Nilsson, Shull, East and others who have segregated these forms that propagate as true to type from seed as cuttings, is of great importance to biological theory, as well as to the art of the breeder. Nilsson is making commercial use, on a large scale, of the principle involved. Tracy, in breeding

seedling varieties of cassava, is doing the same thing on a smaller scale, though his work is only just beginning to show positive results. The seedlings of the cassava plant are ordinarily about as variable as those of the apple. Some three years ago, Professor S. M. Tracy, at the request of the writer, undertook to secure homozygote forms of cassava at Biloxi, Miss. He now has a few varieties nearly completely homozygote, and it is believed that within one or two seasons their culture on a commercial scale will be an accomplished fact. This, it is hoped, will rejuvenate an industry which had died because of the uncertainty of propagating cassava from cuttings.

At least in self-fertilized species, these completely homozygote forms offer splendid material for studying evolutionary changes, and especially for studying those changes induced by change of environment. They should soon become the starting point for some fundamentally important investigations.

W. J. SPILLMAN

U. S. DEPARTMENT OF AGRICULTURE

CURRENT NOTES ON METEOROLOGY AND CLIMATOLOGY

KASSNER'S "DAS WETTER"

A VERY useful little book has just been published by Professor Carl Kassner, observer at the Royal Prussian Meteorological Institute in Berlin, and Privatdocent at the Technische Hochschule in that city ("Das Wetter, und seine Bedeutung für das praktische Leben," 8vo, Leipzig, Quelle und Meyer, 1908, pp. 148). The plan of the volume is rather different from that of other books dealing with the same subject. Its aim is to set forth, for the information of the average reader: (1) The historical development of weather forecasting; (2) the basis of modern weather forecasting and (3) the relations of the weather to the every-day life of man. The section dealing with the historical development of forecasting summarizes briefly the results of Hellmann's investigations into meteorological folk-lore and literature. Special attention may be directed to the third section, which is

an innovation in meteorological text-books, dealing with the importance of weather conditions in practical life. Professor Kassner has collected and classified a considerable number of illustrations of the relation of weather conditions to man's life, activities and health. Many of these examples are not new to those who have worked along the same lines, but the collection of such illustrations will make them widely useful. Professor Kassner has given us a book which occupies a unique field. The low price of the volume (1 Mark, 50 pf.) brings it within reach of a large number of persons.

LAKE CHAD—ITS DESICCATION

IN a recent address entitled "From the Niger to the Nile" (*Scot. Geogr. Mag.*, Jan., 1908), Lieut. Boyd-Alexander noted the supposed decrease in the area of Lake Chad. It is his opinion that the lake does not alter much in size, and that the supposed greater original area is due partly to inaccurate surveying and partly to the fact that certain villages are several miles distant from the lake, giving the impression that they were formerly on the lake shore. The position of these villages, Lieut. Boyd-Alexander believes, is due to the danger of flooding during the blowing of the Harmattan, which causes the water to flow 600 yards over the land with an ordinary wind, and drives it as far as two miles when the wind is strong. Where there are good banks, and where the water is not influenced by the prevailing winds, there are many villages close to the lake. A chain of islands, once separate and now more or less joined by a marsh, has also given the impression of increasing aridity, but this change may very likely be due to the silting of mud and sand against the obstruction of the islands by the opposing influences of the Yo and the Shari, the two rivers that feed the lake.

A RAILWAY WIND GAUGE

SINCE September, 1903, a wind-gauge has been set up near Ulverston, in England, to protect trains from risk in crossing a very exposed viaduct. The apparatus is fixed at the west end of the Levens viaduct. Its

actuating part consists of two boards, kept in a vertical position by springs, and the movements of which are shown on a chart by means of the customary pen and clockwork appliances. A pen is operated by either board according to the direction of the wind, and for greater exactitude of time, the chart-paper, over sixty-five feet long, is perforated, the holes in the paper corresponding with studs in the clockwork wheel. When the wind pressure reaches 32 pounds to the square foot the spring-boards referred to are adjusted to make an electrical contact, ringing bells in the signal cabins on either side of the viaduct. When this occurs, all trains are detained until the force of the wind moderates. Any such interruption is telegraphed to the superintendent of the line. In February, 1907, a velocity calculated as equivalent to 65 miles an hour was recorded.

THE MOON AND CLOUDS

J. R. SUTTON, meteorologist of the De Beers Consolidated Mines, at Kimberley, South Africa, writes "On the Lunar Cloud-Period" in the *Trans. So. Afr. Philos. Soc.*, Vol. XVIII, Part 3, Dec., 1907. The cloud observations at Kimberley have been worked up for eighty-seven lunations, from January 1, 1900, to January 13, 1907. The inference which the author thinks may fairly be drawn from his results seems to be that if the results "do not go far enough to prove that there is a lunar influence over the clouds, they do not prove that there is not. There are, at any rate, a number of interesting coincidences which seem to be worth elucidation."

MOUNTAIN SICKNESS

IN a recent paper on "Mountain Sickness and its Probable Causes," by T. G. Longstaff (Spottiswoode and Co.), the author gives abstracts from the accounts of high mountain-climbing expeditions, and includes the experiences of aeronauts during high balloon ascents, the results of experiments in pneumatic chambers, and his own observations. He believes that mountain sickness is produced by (1) mountain lassitude, due to imperfect oxygenation, and (2) by excessive fatigue and exhaustion.

LONDON FOG AND COUNTRY FOG

LONDON fogs are often very thick; very dark, of the "pea-soup" variety; and very "dry." Fogs in the surrounding country at the same time are clean, white and wet. The difference is largely a question of the impurities, the "dust" of various kinds, in the air of the city. In *Symons's Meteorological Magazine* for December, 1907, a recent case of this kind is noted. On November 11, in the evening, there was a thick, dry fog, "with the pungent fumes of oxide of sulphur very noticeable" in London. Fifteen miles out of the city the fog was white and extremely wet.

NOTE

WITH the present number of SCIENCE, the publication of these "Current Notes on Meteorology and Climatology" ceases, so far as the undersigned is concerned. This step has become necessary owing to the increasing pressure of other work whose accomplishment is imperative, and for reasons of health which can not be disregarded.

Since the first publication of these "Notes" on May 1, 1897, they have appeared in 166 numbers of SCIENCE, on 721 separate topics. In addition, 19 book reviews and 7 short communications on meteorological subjects have been contributed by the writer during the same period.

If during the past twelve years the undersigned has been able, in some slight way, through these "Notes" to help his fellow workers in meteorology and climatology, and in science generally, to keep up with the more important advances in the science of the earth's atmosphere, he will feel well repaid for his labors.

ROBERT DEC. WARD

HARVARD UNIVERSITY,
CAMBRIDGE, MASS.,
April 27, 1908

LETTERS CONCERNING THE ADMINISTRATION OF SYRACUSE UNIVERSITY

GARRISON-ON-HUDSON, N. Y.,
May 23, 1908.

CHANCELLOR JAMES R. DAY,

Syracuse University, Syracuse, N. Y.

Dear Sir: I have received from Dean Kent

a statement in regard to his dismissal from Syracuse University. It appears that you are unwilling to give the reasons for this action beyond the statement that he has been a disappointment to the administration and is *non grata* to the chancellor. It is obvious that a dean should work in harmony with the head of a university, and that there should be courtesy and consideration on both sides. If, however, a dean or a professor is placed in a position of subservience to the president, so that he has no freedom or initiative in his own department, or if he may not freely present his views to the president and to his colleagues, then his position is not tolerable, and no man of ability and independence would willingly accept a position in a university in which such conditions obtained. I do not mean to imply that there is such a deplorable state of affairs at Syracuse, but the dismissal of Dean Kent without a full statement of the grounds seems to confirm the reports that I have received from other sources to the effect that the chancellor regards deans and professors as subject to his individual will.

I venture in the interests of higher education to ask: (1) The grounds leading to the dismissal of Dean Kent; (2) Whether it is true, as alleged, that a professor who should show sympathy with Dean Kent would be liable to dismissal, and (3) whether you regard it as proper to dismiss a professor, if such action would not have the approval of his colleagues on the faculty.

I assume that I may print this letter and your reply in SCIENCE.

Very truly yours,

J. MCK. CATTELL

GARRISON-ON-HUDSON, N. Y.,
May 29, 1908.

CHANCELLOR JAMES R. DAY,

Syracuse University, Syracuse, N. Y.

Dear Sir: I regret that your reply to my letter may not be printed, as it is a clear statement of the policy of academic administration which obtains widely in this country. I myself believe that this policy—according to which the president has autocratic control, subject only to an absentee board of trustees